AREMCO

ACCU-COAT™ SCREEN PRINTERS

Technical Bulletin E1

Aremco's Accu-Coat™ Screen Printers offer the finest technology for precision screening of electronic components and other materials up to 24". Accu-Coat™ printers represent the best price/performance ratio throughout the industry, providing the most accurate, reliable and cost effective solution for your screen printing needs.

Accu-Coat™ Model 3230-D semi-automatic screen printer with microprocessor based controls and optic alignment system with a maximum 9" x 9" print area.

TYPICAL APPLICATIONS

- Co-Fired Ceramic Packages
- Multilayer Hybrid Circuits
- Liquid Crystal Displays
- SMT Boards
- Piezoelectric Thick Film Devices
- Thick Film Resistors & Capacitors
- Silicon Solar Cells
- Ceramic Brazing
- Instrument Panels
- Flexible Circuits

PRODUCT HIGHLIGHTS

Print Repeatability

Each Accu-Coat™ Screen Printer is based on a high precision two- or four-post die set which positions the print head directly above the part. The print head travels to and from the work in a single axis with a print repeatability of ±.0003", guaranteed over millions of cycles. An additional attribute of this design is that both substrates and tall parts such as ceramic rings and tubes can be accommodated since a clearance of 6"–8" between the print head and stage is provided.

Alignment and Registration

Part-to-screen alignment is accomplished using a precision x-y-theta stage with 2" x-y travel and 360° rotation. The theta adjustment is centered to the stage as opposed to competitive models which pivot the part about a corner requiring multiple x-y adjustments before setup is complete.

A low cost optic alignment system is also offered. With this option, during setup the ink is first printed on a sheet of mylar which is supported by an adjustable metal frame above the substrate. The operator then aligns the fixtured board to the printed pattern on the mylar sheet using the stage controls. A 10x or 20x magnification camera and monitor system is also provided to enhance the image when making critical alignments required for fine-pitch SMT boards or hybrid circuits. Multi-camera and split-monitor alignment systems are also available.

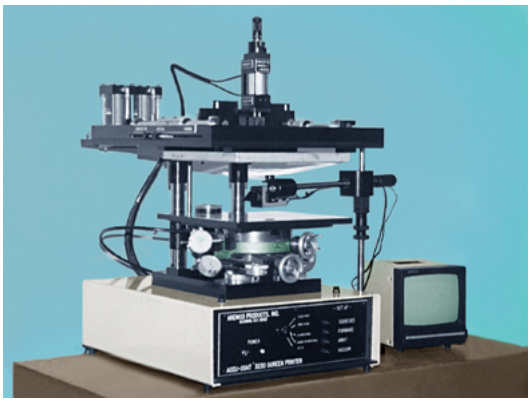
On & Off-Contact Printing

Both screens and stencils can be utilized with the Accu-Coat™ printers. Screens are used for off-contact printing where the squeegee deflects the screen in order to contact the substrate. Stencils are used for on-contact printing in which case the stencil is in direct contact with the substrate. In both on- and off-contact printing, the distance between the screen or stencil and the substrate is controlled easily to within .0005" using a "Z-stop" mechanism.

Controls

Accu-Coat™ screen printers are truly simple machines to operate. The user interfaces with the equipment through an easy-to-use control panel which provides five modes of operation. All modes are pre-programmed into a microprocessor. Modes include setup, print-flood, flood-print, and single and double print with paste hopover.

Vidalign™ 129-131 Optic Alignment System.



Accu-Coat™ Model 3230-B bench-top screen printer.

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When switched to Setup mode, the user can independently control each drive cylinder in order to set snap-off distance, squeegee pressure, print speeds and print limits. These setup controls are described as follows:

Print Head Up-Down This is used to set the snap-off distance.

Squeegee Up-Down This is used to set the squeegee downstop (screen deflection) and squeegee pressure.

Squeegee Forward-Away This is used to set the squeegee travel limits and squeegee speed.

Vacuum On-Off This is used for temporary part hold down.

All automatic modes of operation are software-defined and custom print modes and alternative delays are easily provided. Various options such as a squeegee speed timer, multiprint mode (primarily used for co-fired ceramic via-filling applications) and cycle counter are also available.

Reliability

Accu-Coat™ Screen Printers are extremely rugged tools utilizing reliable industrial components and modern controls. A detailed user manual and diagnostics are provided with every shipment. Most of all, Aremco enjoys a three decade history of screen printer manufacturing and over 1,000 units in the field in Europe, Asia, Middle East, Canada, Austrailia, and throughout the USA.

ACCU-COAT™ SCREEN PRINTER SPECIFICATIONS

Accu-Coat™ Model	3230-BL	3230-B	3230-D	3240	3260
Max Print Area	9″ × 9″	9″ × 9″	9″ × 9″	14″ × 14″	20″ × 20″
Screen Frame ID	12″ × 12″	12″ × 12″	12″ × 12″	16″ × 16″	24″ × 24″
Frame Mounts	13″ × 13″	13″ × 13″	13″ × 13″	17.5″ × 17.5″	26″ × 26″
Max Part Height	6″	6″	6″	8″	8″
Print Repeatability	± 0.0003″	± 0.0003″	± 0.0003″	± 0.0003″	± 0.0003″
Snap-Off	On & Off Contact Printing	On & Off Contact Printing	On & Off Contact Printing	On & Off Contact Printing	On & Off Contact Printing
	Single-Point Micrometer Z-Control with 0.001″ Dial Indicator Readout	Single-Point Micrometer Z-Control with 0.001″ Dial Indicator Readout	Single-Point Micrometer Z-Control with 0.001″ Dial Indicator Readout	Three-Point Micrometer Z-Control with 0.001″ Dial Indicator Readout	Three-Point Micrometer Z-Control with 0.001″ Dial Indicator Readout
Control System	Pneumatic[1]	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Control Modes	Independent Pneumatic Switches for Squeegee Up/Down, Print Head Up/Down & Print Drive In/Out	Setup, Print/Flood, Flood/Print, Single & Double Print with Hopover	Setup, Print/Flood, Flood/Print, Single & Double Print with Hopover	Setup, Print/Flood, Flood/Print, Single & Double Print with Hopover	Setup, Print/Flood, Flood/Print, Single & Double Print with Hopover
Control Options	Not Applicable	Cycle Counter, Squeegee Speed Timer, Multiprint	Cycle Counter, Squeegee Speed Timer, Multiprint	Cycle Counter, Squeegee Speed Timer, Multiprint	Cycle Counter, Squeegee Speed Timer, Multiprint
Squeegee Drive	Hydraulic, Variable Speed Control 0–15 IPS	Hydraulic, Variable Speed Control 0–15 IPS, Optional Electric Drive	Hydraulic, Variable Speed Control 0–15 IPS, Optional Electric Drive	Electric Drive, Variable Speed Control 0–12 IPS	Electric Drive, Variable Speed Control 0–12 IPS
Squeegee Type	Free-Floating 9.5″ Squeegee Holder with ⅜″ Square Blade and Flood Bar	Free-Floating 9.5″ Squeegee Holder with ⅜″ Square Blade and Flood Bar	Free-Floating 9.5″ Squeegee Holder with ⅜″ Square Blade and Flood Bar	Free-Floating 14.0″ Squeegee Holder with ⅜″ Square Blade and Flood Bar	Free-Floating 22.5″ Squeegee Holder with ⅜″ Square Blade and Flood Bar
Options	X-Y-Theta Stage, Vacuum Manifolds, Vacuum Pumps, Optic Alignment	X-Y-Theta Stage, Vacuum Manifolds, Vacuum Pumps, Optic Alignment	X-Y-Theta Stage, Vacuum Manifolds, Vacuum Pumps, Optic Alignment	X-Y-Theta Stage, Vacuum Manifolds, Vacuum Pumps, Optic Alignment	X-Y-Theta Stage, Vacuum Manifolds, Vacuum Pumps, Optic Alignment
Dimensions (L × W × H)	32″ × 24″ × 40″	32″ × 24″ × 40″	40″ × 30″ × 64″	40″ × 30″ × 64″	48″ × 38″ × 64″
Approx. Net Weight (lbs)	150	175	325	450	850
Service	No Electricals Required; 80–100 PSI at 5 CFM	110 VAC, 60 Hz, 5A or 220 VAC, 50 Hz, 3A; 80–100 PSI at 5 CFM	110 VAC, 60 Hz, 5A or 220 VAC, 50 Hz, 3A; 80–100 PSI at 5 CFM	110 VAC, 60 Hz, 5A or 220 VAC, 50 Hz, 3A; 80–100 PSI at 5 CFM	110 VAC, 60 Hz, 5A or 220 VAC, 50 Hz, 3A; 80–100 PSI at 5 CFM

Reference Notes

[1] Pneumatic control system can be upgraded to a Microprocessor system if semi-automatic controls are required at a later date.